DOCUMENT RESUME

ED 201 681 TM 810 289

AUTHOR Eash, Maurice J.; And Others
TITLE Evaluation of Multiple Outcomes in the Child Parent Center Compensatory Education Program: Year II.
PUB DATE Apr 81
NOTE 36p.; Paper presented at the Annual Meeting of the American Educational Research Association (65th, Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; *Compensatory Education; *Disadvantaged Youth; *Early Childhood Education; Elementary School Mathematics; Family Environment; *Intervention; Locus of Control; *Longitudinal Studies; *Parent School Relationship; Reading Achievement
IDENTIFIERS Comprehensive Tests of Basic Skills; Elementary Secondary Education Act Title I; Iowa Tests of Basic Skills; *Parent Child Centers

ABSTRACT

Results are reported from the second year of a longitudinal evaluation of Child Parent Centers (CPC's) serving low-income urban children. Six-year-old participants and nine-year-old former participants and comparison groups were analyzed on measures including reading and mathematics achievement, internal-external control belief, and parent-interview measures of home educational environment. The first year's report showed significant differences favoring the CPC treatment on all measures. The second year's data allowed the investigators to increase precision by statistically controlling for initial differences using the first year's data. In general, findings continued to favor CPC's over comparison groups. In addition, a rationale is reported which supports the conclusion that treatment and comparison groups were initially equivalent. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED201681

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Evaluation of Multiple Outcomes in the Child Parent Center Compensatory Education Program: Year II

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

M. J. Eash

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Maurice J. Easb
Kendon J. Conrad
Ernest T. Pascarella
University of Illinois
at Chicago Circle

TM 810 289

Presented at the Annual Meeting of the
American Educational Research Association
Los Angeles, April, 1981

Overview and Objectives

This paper presents a longitudinal evaluation of an early childhood program in a large city. Child Parent Centers have been established in certain disadvantaged areas to provide systematic educational experiences for preschool children as young as three years of age. The objective of this study is to provide an update on the current state of the Child Parent Center (CPC) and its latest adaptation, the Child Parent Expansion (CPX) Program. In the process, the study is designed to contribute to a better understanding of the practice of at least one phase of early childhood compensatory education.

Rationale and Description of the Child Parent Centers

The rationale underlying the Child Parent Centers is fundamentally similar to that of other early childhood compensatory education programs, most notably Head Start and Follow Through. Like these two massive programs, the CPC intends to break the cycle of poverty through an early (age three through eight), intense, systematic, and continuous educational intervention. The distinguishing characteristics of CPC's, however, are their emphasis upon direct parental involvement in the schools and a structured language/basic skills program. The CPC's also provide a wide range of educational materials, a reduced class size, and improved nutrition and health care.

Child Parent Centers, funded under the aegis of ESEA Title I, were begun in Chicago in 1967. These locally developed centers were designed to meet the needs of disadvantaged communities. The CPC's, each of which is affiliated with an established public elementary school (sponsor),

provide the following materials and services:

1. Parents or guardians are asked to spend the equivalent of two days (four half-days) a month at the center because parent participation is considered an integral part of the curriculum design.
2. Half-day classes are held for an average membership of seventeen pupils per class, age three through kindergarten.
3. Full-day classes are held for an average membership of twenty-five pupils per class, grade one through grade three.
4. Audiovisual equipment and culturally oriented materials, geared to the levels of the participating pupils, are in all of the centers.
5. Pupils participating in the activity in the morning session are provided with a breakfast and lunch at the center, and pupils attending the afternoon sessions are served a snack.
6. The centers are administered by the principal of the parent school to which the CPC is affiliated.
7. Each center is assigned one teacher and one teacher aide for each class.
8. Each center is also assigned the following: a parent-resource teacher, a school and community representative, a school clerk, and a janitor. One head teacher, freed of classroom duties, is provided at each center.
9. The centers share the services of speech therapists, social workers, school nurses, licensed practical nurses, and health aides with the affiliated schools.

The Child Parent Expansion Program

From 1967 until 1977 the CPC's served preschool to third grade. In 1977 the program was discontinued at the first, second, and third grades. However, on the basis of favorable findings from prior evaluations (Stenner, 1974; Eash & Rasher, 1976) the Illinois Office of Education recommended and the state legislature provided funds for compensatory programs beyond kindergarten through the third year. Vertical expansion of the CPC program into designated classes of the affiliated (sponsor) schools was begun in 1978. It was planned that the program would expand year by year until it encompassed grade three in 1981; but, due to budget cuts, the expansion was halted at grade two for all but six selected sponsor schools.

A special adaptation of the Child Parent Expansion Program (CPX) was established in six selected sponsor schools in September, 1978. This expansion involved the immediate extension of CPC treatment to include age cycles six, seven, and eight. The four sponsor schools included in this present study were involved in the immediate expansion program. Probably the most notable difference between the CPC and the CPX is that class size goes from seventeen in the CPC to twenty-five in the CPX. Otherwise, services and resources are designed to remain at the same level. From this point in the paper, CPC's and CPX's will both be referred to as CPC's unless it is necessary to distinguish between them.

Evaluation of Child Parent Centers

A number of evaluations of the educational effects of the CPC's have been conducted (e.g., Stenner, 1974; Eash & Rasher, 1976; Fuerst, 1977).

Due to the limitations of time, resources, expertise and purpose, however, the existing evaluations share a number of weaknesses:

1. Often they have been cross-sectional, one-shot studies which lacked meaningful measures of prior student achievment (e.g., Stenner, 1974 had longitudinal data but did not control for prior achievement in estimating treatment effects).
2. They have often lacked comparison goups; relying instead on comparisons with national norms. Without comparison groups it has been difficult to attribute effects to the CPC experience.
3. They have analyzed achievement outcomes almost exclusively, neglecting other important components of learning.
4. They have generally failed to document the nature of or the degree of implementation of CPC treatment versus conventional treatment.
5. The evaluations have been conducted by or sponsored by the same agencies which fund and direct the program rather than by independent agencies.

There is a continuing need for evaluative data to inform practice and guide funding. Further, the effects of the CPC's need to be clearly assessed, if educational contributions from this large investment of time, capital, and human energy, are to be extended to a larger population.

In an effort to address these needs, a three year, longitudinal evaluation was designed. In this evaluation, measures were sought on: academic achievement, home support for academic achievement, instructional treatment (not included in this paper), locus of control (Crandall, 1965),

and a number of status variables (e.g. attendance, family size). The study employs a quasi-experimental, nonequivalent control group design which uses multiple regression procedures to control for differences in pretreatment achievement. Table I is intended to summarize what the authors believe are the advantages and limitations of this study.

We believe the current study had the added advantage over the typical evaluation study in early childhood interventions of being longitudinal of the same cohorts of subjects, documentation of the treatment to ensure there was a treatment, and multiple data sources on results.

Method

This paper is a report on the first and second years of the proposed three year longitudinal evaluation of selected Child Parent Centers in a large midwestern city. The three year evaluation design involved the comparison of two populations (treatment group vs. comparison group) for each of two age cohorts, five year olds and eight year olds.

First, five year old children enrolled in CPC's (with one to three years of CPC experience) were compared to similar children (that is, living in the same sort of disadvantaged community) in regular classrooms. Measures of achievement, attendance, number of siblings, birth order, and home support were collected during the first year of the proposed evaluation.

The second comparison was of students at the third grade level (eight year olds) who had had prior CPC experience to students at the same level

who had attended regular classrooms. The majority of eight year olds with prior CPC experience were enrolled in expansion (CPX) classrooms while the other eight year olds in the sample were in regular eight year old classrooms. The purpose of this comparison was to help assess the long range effects of participation in CPC's and CPX's on students and to assess the effectiveness of the relatively diluted CPX program. Measures collected for the eight year old sample were the same as for the five year olds, with the addition of data on locus of control. In addition to the measures just described, a sample of classroom observations was conducted in CPC, CPX and regular classrooms for both age groups during the first year of the study to document the instructional treatment of CPC/CPX classrooms versus regular classrooms. The instructional treatment data though recently analyzed and supporting the thesis that there is a distinctive treatment, are not included in this report. The general goal of the evaluation was to assess the impact of CPC and CPX experience on student growth controlling for initial differences.

Variables

Outcome measures used were: the Comprehensive Tests of Basic Skills (CTBS, 1973), the Iowa Test of Basic Skills (ITBS, 1972) a measure of locus of control called the "Intellectual Achievement Responsibility Questionnaire" (IAR, Crandall 1965) and an educational home support interview by Dolan (1978).

The CTBS is the instrument provided under Title I to assess achievement in CPC's at the kindergarten level. In addition to the test administered in CPC's, tests were provided for all regular kindergarten classrooms included in the study. The Level A battery contains eight

tests: Letter Forms, Letter Names, Listening for Information, Letter Sounds, Visual Discrimination, Sound Matching, Language, and Mathematics. In addition, two area scores are reported: Alphabet Skills and Visual and Auditory Discrimination. Pre-Reading Total is the sum of all individual scores excluding Mathematics.

Six subscales of the ITBS were used in the study: Vocabulary, Reading Comprehension, Spelling, Word Analysis, Math Concepts, and Math Problems. Math total scores calculated by summing the Math Concepts and Math Problems subscores were also reported. In addition, Total Achievement scores, computed by taking the mean of Reading Comprehension, Vocabulary, Math Concepts and Math Problems subscores, were used in several of the analyses. ITBS scores were reported as grade equivalents.

The IAR questionnaire, which measures the degree to which students accept responsibility for their own intellectual progress, was also administered orally to eight year olds. The measure is considered an assessment of locus of control with regard to academic performance. Three scores are reported: Locus of Control Positive, which reflects the extent to which students assume responsibility for positive events; and Locus of Control Total[1], which reflects the extent to which students assume responsibility for both positive and negative events. The items were read to students, as recommended by the authors for children below grade five.

In addition to the classroom observation data, a modified version of Dolan's (1978) home support interview was administered to a random sample of approximately 120 parents in the first year and 83 parents in the second year. These data were used to assess the level of parent

[1] The authors report test-retest reliability coefficients for third and fifth grades of .69 for this score.

support for academic achievement. Dolan reports a test-retest reliability of .74 and internal consistency coefficients ranging from .68 to .79. The interviews are regarded as extremely valuable because they were conducted by school and community representatives (SCR's). The SCR's were known to parents because most of them lived in the community. It was felt that if anyone could get reliable information from parents it was the SCR's. A 100% sample return on parent interviews was achieved during the first year and a 70% response of the original sample was achieved during the second year.

The chief independent variable of interest in the present study was the treatment, that is, CPC and CPX experience. Students without previous CPC/CPX experience served as the comparison group. In addition to the treatment, however, sex, firstborn, attendance and total number of siblings were included as independent variables in some of the analyses. Although locus of control was used primarily as a dependent measure, it appears in several analyses as an independent variable where it was examined as a major influence in an outcome variable.

Organization

The sample of children included in the study was drawn from four elementary sponsor schools plus associated Child Parent Centers and two additional comparison elementary schools, all in similar neighborhoods in close proximity. All of the schools and CPC's serve predominantly black, low income populations (see Table 2). Achievement in this area, as shown by standardized tests, is below national norms.

The population in this evaluation included all five year olds in the six elementary schools (N=304) and the four CPC's (N=227). No eight

year olds were enrolled in the CPC's. Most eight year olds with previous CPC experience were enrolled in expansion classrooms (CPX's) in the four parent schools. All eight year olds in expansion classrooms (N=54) were included in the study. In addition, all eight year olds enrolled in regular third grade classrooms in the six elementary schools were tested (N=425).

All measures reported here were group administered or were obtained from school records. Home interviews were administered to parents by School-Community Representatives on an individual basis. Each interview took approximately one hour to complete. Because interview data were so costly to collect, random samples of the parents of five year old and eight year old treatment and control groups were selected to receive interviews (N=121).

It should be noted that enrollment in the CPC program was voluntary and required a continuing commitment on the part of parents of enrolled children. For these reasons the equivalence of CPC and comparison groups at both age levels cannot be assumed, but approaches are employed in an effort to rule out possible selection biases.

First Statistical Analysis

All achievement and locus of control scales were plotted using the Statistical Analysis System Univariate Program. Plots were checked for skewness and conformity to normal probability expectations. One scale (CTBS, Reading Total) was discarded from all analyses because missing data were found to create a skewed, bimodal distribution which violated regression assumptions.

Multiple regression analysis of covariance was the major analytical procedure used. For the five year old sample each reading and mathematics achievement measure was regressed on student sex, birth order, family size and days absent (treated as covariates) and a dummy coded variable representing CPC versus comparison group membership. CPC members were coded 1 while the comparison group members were coded 0.

The variables were entered in the regression equations in a setwise manner. The set of covariates were entered first followed by the dummy variable representing CPC versus comparison group exposure. Standardized partial regression coefficients (or beta weights) were employed to represent the contribution of individual variables to prediction with the influence of all other variables in the equation held constant statistically.

The analysis of the data from the eight year old sample proceeded in essentially the same manner. The one exception was the addition of Locus of Control as a covariate in the prediction of each achievement measure. Locus of control was also regressed on each of the other covariates and the dummy treatment variable to determine if it was significantly and positively associated with CPC exposure.

Because home support data were not available for most students, the measure of home support was not included in the regressions. However, independent t-tests were performed comparing home support scores for CPC versus regular kindergarten 5 year olds, and for CPX versus regular third grade 8 year olds.

Results

The major findings of the first statistical analysis concerned the

effects on achievement of CPC treatment as compared to the regular school experience for our two age cohorts, eight year olds and five year olds. Using multiple regression, achievement scores were compared from the ITBS for the 30 expansion children (eight year olds) and the 288 control children (eight year olds) for whom complete data were available. For all subtests of the ITBS, the regression coefficient for expansion vs. control was greater than zero, indicating a positive effect of expansion classroom participation (see Table 3). The beta weights for Vocabulary, Spelling, and Word Analysis were positive but not statistically significant; whereas those for Reading Comprehension, Mathematics Concepts, Mathematics Problems and Mathematics Total were statistically significant at the .05 level. These findings indicated significant differences not in the areas where recall is the dominant cognitive function (Vocabulary and Spelling); but, rather, in those areas where interpretation and application are most important (Reading Comprehension and Mathematics Concepts).

It was also found that expansion students demonstrated a significantly higher internal locus of control ($p<.01$) when compared to students in regular schools. Further, it was found that higher internal locus of control is very strongly related to increased achievement. This was demonstrated by significant beta weights for locus of control in the regressions for all ITBS subscales. Although we were not able to infer causality in this analysis, longitudinal data in subsequent analyses of the study may permit stronger inferences concerning the importance of this variable. These findings clearly supported the findings of other studies relating locus of control to achievement (de Charms, 1972; Reimanis, 1971;

Messer, 1972).

A related finding was that family size had an inverse relationship with locus of control, possibly indicating that the different level of interaction of adults and child was responsible in some degree for a higher sense of internal control.

Achievement data for five year olds were obtained using the CTBS. In the five year old sample (Table 4), the relationship between CPC treatment and achievement was even more pronounced. As was the case for the eight year old sample, regression coefficients for all subscales were positive. On the scales involving composite scores, Total Discriminating, and Mathematics, the effect of CPC participation was significant at the .01 level.

T-Tests were performed on both rounds of parent interviews for the 5/6 and 8 year age cohorts (Table 5). All favored CPC parents, and the results for the second round (age 6) were statistically significant (P .04) as were findings for age 8 (p .05). A regression analysis of covariance was performed regressing treatment on total interview scores (age 6) controlling for prior total interview scores (age 5). The contribution of treatment became non-significant but was in the direction favoring parents of CPC children.

Second Analysis

In the second year of the study, achievement data were collected for both age cohorts for two years -- 5/6 year olds in 1979 and 1980 and 7/8 year olds in 1978 and 1979.

In 1980 the 5/6 year old cohort (now first grade) were administered the CTBS, Level B, Form S. The purpose of this second round of data

collection was to obtain two years of achievement measures for each age cohort so that prior achievement could be controlled for by statistical methods.

The effects of treatment (for the six year olds second year) on each CTBS scale and the CTBS total score controlling for a prior CTBS score, sex, first born, and number of children in the family were analyzed using the Statistical Package for the Social Sciences (SPSS) Analysis of Covariance program. The results were generally contrary to the first year's findings (See Table 6) insofar as they favored the comparison group.

These results represent an anomaly in the study and, therefore, deserve some discussion. First of all, the findings must be viewed with skepticism because of a great deal of missing individual data (60%). This was due to natural attrition and to the fact that the CTBS was not administered as part of the CPC program at age six as it was at age five. This meant that the administration of the CTBS could not be supervised as well as previously, and this probably resulted in differentially missing respondents and other threats to validity. It will be interesting to see if these results hold up in future trials.

The seven and eight year old ITBS trials do not parallel the unfavorable six year old CTBS results, but do concur with the previous age five findings. When measuring the effects of treatment on the 1978 and 1979 ITBS scales (ages 7 & 8) controlling for days absent, it was found that CPC treatment was positively associated with increased achievement (Tables 7 & 8) as was already seen to be the case for the 1979 ITBS (Table 3).

In the most rigorous comparison which could be performed, measuring the effects of CPC treatment on the 1979 ITBS controlling for prior achievement as measured on the 1978 ITBS, the results favored CPC treatment on all but one scale (Table 9), but not at a level reaching statistically significance.

Third Analysis

The researchers were sensitive to the idea that positive findings favoring CPC treatment could be due to an initial advantage caused by a favorable selection bias. In other words, a plausible rival hypothesis for positive findings would be that children from more advantaged homes had selected themselves into CPC treatment. In an effort to eliminate this selection bias, it was decided that students from the two comparison schools not sponsoring CPC's would be compared to all of the students from the schools sponsoring CPC's. In this comparison then, the treatment group (schools sponsoring CPC's) would include both actual CPC treated students and non CPC students. It was thought that if schools sponsoring CPC's were consistently and significantly better, this would indicate that CPC treatment had a beneficial impact on the entire school population. If the comparison schools were consistently better, this would indicate that CPC treatment had a negative impact. This analysis assumes initial equivalence of groups, an assumption which could be argued strongly due to the homogeneous sample population.

In this analysis it was consistently found that students from schools sponsoring CPC's did better on the 1978 ITBS controlling for days absent, (Table 10) on the 1979 ITBS controlling for days absent (Table 11) and on the 1979 ITBS controlling for 1978 ITBS (Table 12). Some findings,

especially on verbal scales, were statistically significant. This result is interpreted to mean that CPC's have a generally favorable impact on the school population as a whole.

Conclusion

Achievement findings in general favor the Child Parent Centers as do the locus of control and parent interview results. Comparisons using prior achievement as a covariate reduce statistical results to non-significance. Therefore it is not possible to conclude that CPC treatment makes a significantly favorable difference over regular schools in one year. However, we do not necessarily believe this analysis is the most appropriate in this type of study. Probably the most notable results are not those using statistical methods to achieve equivalence of groups, but those based on the logical equivalence built into th quasi-experimental design of the study. In comparisons of CPC treated students vs. non-CPC treated students, the CPC treated students score significantly higher. In the comparisons of students from non-CPC schools vs. students from sponsor schools and affiliated CPC's, the CPC treatment group scores significantly higher. Of course, a direct causal path has not been clearly demarked but a recurrent relationship has been observed.

On locus of control, a measure which has been found to relate to achievement, the CPC's were again found to be superior to the comparison group. An inverse relationship between increased locus of control and number of siblings may indicate that increased access to parents promotes increased feelings of responsibility for achievement in children. This indication supports the strategy of parent involvement employed by the CPC's.

Generally this two year longitudinal study gives substantial support to the usefulness of early intervention through formal education beginning at age 3. When a total program is developed that involves parents as well as children it does effect increased achievement and the effect persists as seen when students are tested as much as five years later.

In a section of the population where low achievement has had grave consequences for limiting job opportunities, the effectiveness of the early intervention strategy to effect improvement in achievement takes on added importance. Continued ineffective education feeds those attendant social problems of unemployment, low social mobility, crime and dependence on welfare. To interdict this vicious cycle should be of high priority in national goals. Effective early intervention as documented in this study appears to be one approach which holds promise of making long range impacts on children's achievement and expanding the opportunities for them to enter more effectively into the mainstream of society.

Such a program as carried in the CPCs has its financial costs. Children do receive educational treatments beginning at age 3 instead of age 5, for one-half day. There are added costs of reduced class size, need for further support personnel in the classroom (aides) and community workers. The latter are especially needed if an effective parent education program is to proceed along with the formal educational treatment which we believe is a critical component of the overall educational strategy. But, as in all cases of costs in educational programs, the benefits must be weighed.

Provision of education which enhances the individual's achievement,

we believe, must be viewed as a societal investment rather than a personal prerogative. The social costs of those unable to participate in society, or whose participation is cast in anti-social terms (crime, unemployability, poor interpersonal relationships, low responsible personal conduct) is well documented. Moreover, these traits are passed along in the children much like locking mirrors face to face. To move large groups of these children into a productive mode would entail opening many more CPC's and maintaining the characteristics of treatment which have been found in this study to be crucial to making a difference over the comparison group children who were not exposed. To not take this path we believe is short sighted and destructive of the precious human resources which are needed to build a quality society. In a society where the quality of life is adjudged to be slipping, there are few constructive suggestions or specific points for a change in social policy which have promise of reversing some of the downward trends in crime, unemployment, etc. We believe the expansion of CPC's offers a worthy hypothesis for social investment and that this study gives reason to believe that such an investment would pay healthy social and personal dividends.

References

Anderson, Richard B., St. Pierre, Robert G., Proper, Elizabeth C., Stebbins, Linda B. Pardon us, but what was the question again?: A response to the critique of the Follow Through evaluation. Harvard Educational Review, 1978, 48, 161-170.

Bloom, Benjamin. Stability and change in human characteristics. New York: Wiley, 1964.

Campbell, Donald T., and Stanley, Julian C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally & Co., 1963.

Chicago Board of Education, Illinois. Department of Government Funded Programs. ESEA Title I., child-parent centers, 1972-73, final evaluation report. Arlington, Virginia: IBEX, Inc., 1974.

Chicago Board of Education, Illinois. Department of Government Funded Programs. ESEA Title I, early childhood education 1973-74, final evaluation report. Arlington, Virginia: IBEX, Inc., 1975.

Chicago Board of Education, Illinois. Department of Government Funded Programs. ESEA Title I, early childhood education 1974-1975, final evaluation report. Durham, North Carolina: IBEX, Inc., 1976.

Chicago Board of Education, Illinois. Final evaluation of 1975-76 ESEA Title I child-parent centers. Chicago: Author, 1977.

Chicago Board of Education, Illinois. Department of Government Funded Programs. Adaption - expansion of the ESEA Title I child-parent centers activity. Chicago: Author, 1978.

Chicago Board of Education, Illinois. Department of Government Funded Programs. Adaption of ESEA Title I child-parent centers activity: extension of age cycle 7 & 8 in six selected parent schools. Chicago: Author, 1978.

Crandall, V. C., Katkovsky, W., and Crandall, V. J. Children's beliefs in their own control of reinforcement in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.

CTB/McGraw-Hill Comprehensive Tests of Basic Skills, Level A, Form S, Expanded Edition. Monterey, California: CTB/McGraw-Hill, 1973.

De Charms, R. Personal causation training in the schools. Journal of Applied Social Psychology, 1972, 2, 95-113.

Dolan, L. The affective consequences of home support, instructional quality and achievement. Urban Education, 1978, 13, 323-344.

Eash, Maurice J. and Rasher, Sue P. Longitudinal evaluation of Child-Parent Centers. Unpublished manuscript, University of Illinois at Chicago Circle, 1976.

Fuerst, J.S. Child parent centers: an evaluation. Integrated Education, 1977, 15, 17-20.

House, Ernest R., Glass, Gene V., McLean, Leslie D., Walker, Decker, F. No simple answer: Critique of the Follow Through evaluation. Harvard Educational Review, 1978, 48, 128-160.

Lefcourt, Herbert M. Locus of control: Current trends in theory and research. Hillsdale, New Hersey: Lawrence Erlbaum Associates, 1976.

Lindquist, E. F., Hieronymus, A. N., Hoover, H. D., Peterson, J., Whitney, M., Lewis, T., Neckere, E., Strayer, F., Fry, M., Monroe, V., Humphrey, K., Billington, R., and Cohen, A. Iowa Tests of Basic Skills. Boston: Houghton Mifflin, Company, 1972.

Messer, S. B. The relation of internal-external control to academic performance. Child Development, 1972, 43, 1456-1462.

Reimanis, G. Effects of experimental IE modification techniques and home environment variables of IE. Paper presented at the American Psychological Association Convention, Washington, D.C., 1971.

Stenner, A. Jackson, and Mueller, Siegfried G. A successful compensatory education model. Phi Delta Kappan, 1973, 55, 246-248.

Westinghouse Learning Corporation/Ohio University. The Impact of Head Start: An Evaluation of the effects of Head Start on children's cognitive and affective development. Washington, D.C: Office of Economic Opportunity, 1969. (Distributed by Department of Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.)

Table 1

Advantages and Limitations of the Child Parent Center Study

	ADVANTAGES	LIMITATIONS
1. LONGITUDINAL DESIGN	Enables use of prior measures in estimating treatment effects. Gives an indication of differential change with well-defined sample populations.	1. At present, two data collections for two age cohorts represent four years. It would be better to follow the same students for four years. 2. Longitudinal studies are hampered by high attrition rates.
2. QUASI-EXPERIMENT	Comparison groups enable causal inferences.	Internal validity is chiefly threatened by selection biases.
3. NATURALLY OCCURRING PROGRAM	External validity (generalizability is high relative to a true experiment.	Open to all the vagaries of the context in which the educational treatment was administered.
4. HOMOGENEOUS DISADVANTAGED POPULATION	Helps improve internal validity because it is difficult to impute a selection bias when people have had very little choice about where they live and send children to school.	Limits generalizability to disadvantaged black populations as represented in this group.
5. MULTIPLE OUTCOMES	Provide several indications of differential merit. Answer several questions of the policy shaping community.	
6. TREATMENT VERIFICATION (not included in this paper)	Provides evidence that treatments are or are not being implemented as intended. Provides a basis for causal inferences.	
7. EVALUATORS ARE REMOTE AND UNAFFILIATED	Should reduce interaction effects and increase objectivity.	Weakness the organic, holistic appreciation and understanding which come with continued, direct experience.
8. ESTABLISHED, 13-YEAR-OLD PROGRAM	Provides a basis for construct validity in the building of a theoretical model. Guarantees against Hawthorne effects.	Strength of original treatment may be vitiated by change in staff and loss of original direction and enthusiasm.

Table 2

Student Racial Composition and Percentage of Students from Low Income Homes for Schools Included in the Evaluation of Child Parent Centers

	Percent Black[a]	Percent Low Income[b]
A. Sponsor school with CPC	99	83.27
B. Sponsor school with CPC	74	66.76
C. Sponsor school with CPC	99	54.07
D. Sponsor school with CPC	99	60.26
E. Comparison school	100	72.01
F. Comparison school	100	66.47

[a]Demographic data from Selected School Characteristics 1973/74 - 1977/78; Prepared by the Department of Administration.

[b]Percentage of students from Low Income Homes. The percentage indicated is based on the information in the Annual Full Enrollment and Housing Report. The data are determined by federal census data and the percent from low income families as reported by the State of Illinois.

Table 3

Total R^2 and Beta Weights for Eight Year Old Achievement Measures[a] and Locus of Control[b]

	Vocabulary	Reading Comprehension	Spelling	Word Analysis	Mathematics Concepts	Mathematics Problems	Mathematics Total	Locus of Control
R^2 TOTAL	.25**	.28**	.18**	.19**	.31**	.27**	.31**	.06**
Sex	.09	.06	.22	.10	.08	.12*	.11*	.01
Previous CPC Experience	.05	.07	.03	.05	.15*	.10	.13	.06
First Born	-.01	-.04	-.14	.003	.04	.04	.04	.05
Number of Siblings in Family	.02	-.01	-.05	-.05	-.04	.01	-.01	-.17**
Locus of Control	.37**	.37**	.24**	.24**	.41**	.42**	.44**	---
Days Absent	-.30**	-.27**	-.11	-.25**	-.28**	-.20**	-.25**	-.03
Expansion of CPC Treatment vs. Control	.05	.18*	.09	.16	.18*	.15*	.17*	.21**
N of cases	289	288	166	207	289	289	289	302

* $p < .05$
** $p < .01$

[a] Iowa Test of Basic Skills

[b] Coded 1 = CPC; 0 = control

Table 4

Total R^2 and Beta Weights for Five Year Old Achievement Measures[a]

	Letter Forms	Letter Names	Alphabet Skills	Listening for Information	Letter Sounds	Visual Discrimination	Sound Matching	Total Discriminating	Language	Mathematics
R^2 TOTAL	.08**	.07**	.09**	.04**	.07**	.13**	.07**	.12**	.007	.10**
Sex	.003	-.03	-.01	.06	.05	-.12*	-.02	-.07	-.004	.01
First Born	-.09	-.07	-.09	-.01	.004	-.07	.01	-.03	.04	-.01
Number of Siblings in Family	.05	.04	.06	-.06	.03	.07	.12	.12	-.06	-.02
Days Absent	-.25**	-.23**	-.26**	-.18**	-.22**	-.24**	-.12**	-.19**	-.03	-.24**
Child Parent Center vs. Control[b]	.12*	.12*	.13*	.07	.14*	.23**	.20**	.25**	.06	.21**
N of cases	276	277	276	278	279	283	285	283	281	282

* $p < .05$
** $p < .01$

[a] Comprehensive Tests of Basic Skills

[b] Coded 1 = CPC, 0 = control

Table 5

T-tests of Home Support Scores for CPC/CPX
Parents vs. Parents of Students in Comparison Groups

Student Age	T-value	DF	P <
5	1.56	59	.13
6	2.13	39	.04
8	2.25	59	.05

Table 6

Significance Levels and Total R^2 for
Second Year's Achievement[a] Controlling for
Prior Achievement[a] of the 5/6 Year Old Age Cohort

Scale	Direction[b]	P <	R^2
Letter Sounds	-	.000	.48
Word Recognition	-	.1	.41
Reading Comprehension	-	.01	.43
Word Recognition 2	-	.000	.45
Language 1	-	.03	.13
Language 2	+	.91	.15
Language Total	-	.14	.16
CTBS Total	-	.07	.41

[a]Comprehensive Tests of Basic Skills

[b]Negative indicates that comparison groups did better than achievement groups (Comparison coded 0; treatment coded 1).

Table 7

The Effect of CPC Treatment on 1978 ITBS (7 year olds) Achievement Scales Controlling for Days Absent

SCALE	N[a]	DIRECTION[b]	P<	R^2
1978 Vocabulary	250/48	+	.01	.091
1978 Reading Comprehension	238/45	+	.01	.064
1978 Spelling	207/34	+	.001	.095
1978 Word Analysis	246/48	+	.001	.106
1978 Math Concept	250/48	+	.003	.09
1978 Math Problems	249/48	+	.001	.066
1978 Math Total	249/48	+	.001	.085

[a]Number of subjects in comparison group over number of subjects in treatment group.

[b]Positive indicates results favoring CPC treatment group; negative favors comparison group.

Table 8

The Effects of CPC Treatment on 1979 ITBS (8 year olds)
Controlling for Days Absent

SCALE	N[a]	DIRECTION[b]	P<	R^2
1979 Vocabulary	235/42	+	.14	.102
1979 Reading Comprehension	234/42	+	.02	.095
1979 Spelling	142/21	+	.11	.019
1979 Word Analysis	177/28	+	.002	.112
1979 Math Concepts	235/42	+	.001	.119
1979 Math Problems	235/42	+	.004	.067
1979 Math Total	235/42	+	.001	.1

[a]Number of subjects in comparison group over number of subjects in treatment group.

[b]Positive indicates results favoring CPC treated group. Negative favors comparison group.

Table 9

The Effects of CPC Treatment on 1979 ITBS
Controlling for 1978 ITBS

SCALE	N[a]	DIRECTION[b]	P<	R^2
1979 Vocabulary	261/49	-	.06	.586
1979 Reading Comprehension	247/46	+	.51	.522
1979 Spelling	153/19	+	.12	.442
1979 Word Analysis	200/32	+	.11	.4
1979 Math Concepts	261/49	+	.59	.47
1979 Math Problems	260/49	+	.62	.39
1979 Math Total	260/49	+	.77	.54

[a]Number of subjects in comparison group over number of subjects in treatment group.

[b]Positive indicates results favoring CPC treated group. Negative favors comparison group.

Table 10

Students from Schools Sponsoring CPC's Are Compared
to Students from Comparison Schools Not Sponsoring CPC's
on scales of the 1978 ITBS (7 year olds) Controlling for Days Absent

SCALE	N[a]	DIRECTION[b]	P<	R^2
1978 Vocabulary	117/181	+	.09	.081
1978 Reading Comprehension	112/171	+	.03	.058
1978 Spelling	112/129	+	.5	.055
1978 Word Analysis	115/179	+	.03	.071
1978 Math Concepts	117/181	-	.65	.064
1978 Math Problems	117/180	+	.38	.020
1978 Math Total	117/180	+	.76	.044

[a]Number of subjects from schools not sponsoring CPC's over number of subjects from schools sponsoring CPC's.

[b]Positive indicate results favoring schools sponsoring CPC's. Negative favors schools not sponsoring CPC's.

Table 11

Students from Schools Sponsoring CPC's Are Compared to Students from Schools Not Sponsoring CPC's on Scales of the 1979 ITBS (8 year old) Controlling for Days Absent.

SCALES	N[a]	DIRECTION[b]	P<	R^2
1979 Vocabulary	110/167	+	.03	.11
1979 Reading Comprehension	110/166	+	.04	.09
1979 Spelling	76/87	+	.03	.034
1979 Word Analysis	77/128	+	.000	.138
1979 Math Concepts	110/167	+	.37	.082
1979 Math Problems	110/167	+	.38	.041
1979 Math Total	110/167	+	.39	.064

[a]Number of subjects from schools not sponsoring CPC's over number of subjects from schools sponsoring CPC's.

[b]Positive indicate results favoring schools sponsoring CPC's. Negative favors schools not sponsoring CPC's.

Table 12

Students from Schools Sponsoring CPC's Are Compared
to Students from Schools Not Sponsoring CPC's
on Scales of the 1979 ITBS (8 year olds)
Controlling for 1978 ITBS (7 year olds)

SCALE	N[a]	DIRECTION[b]	P <	R^2
1979 Vocabulary	120/190	+	.8	.581
1979 Reading Comprehension	114/179	+	.28	.524
1979 Spelling	80/92	+	.82	.434
1979 Word Analysis	84/148	+	.04	.404
1979 Math Concepts	120/190	+	.33	.472
1979 Math Problems	120/189	+	.87	.391
1979 Math Total	120/189	+	.59	.539

[a]Number of subjects from schools not sponsoring CPC's over a number of subjects form schools sponsoring CPC's.

[b]Positive indicates results favoring schools sponsoring CPC's. Negative favors schools not sponsoring CPC's.